



# JACG 74CE

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THE JERSEY ATARI COMPUTER GROUP

534-6349

JACG HOTLINE

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From the Editor's  
Desk...

In This Issue

Every one of us has had a problem with our computer system which caused us frustration and time loss. Each time we entered new territory it was exciting and challenging but fraught with the dangers of failure. How nice it would have been to be able to call someone who was knowledgeable and would share our dilemma. How comforting it would be to have such a list and know that help was a short phone call away.

That is exactly what JACGer Charlie Miller is up to right now. He has volunteered to set up a data base of our members who will act as mentors in some area(s) of expertise and make themselves available to those who hit stumbling blocks. You don't have to be "expert" in the classic sense to be a valuable asset in this project. If you have been using Atariwriter a lot, and feel you can help a newcomer get started, you qualify. If you have experience using several of the common graphics packages and would be willing to share a bit with others you're on board. If you are an advanced programmer in the many languages another aspect is filled. It's that simple.

Charlie wants to hear from you. He needs your name, phone number, hours when you can be called (or maybe you prefer only written requests), and topic(s) you would help others with. What's in it for you? First, the satisfaction of being a GIVER to the club. Then there's the possibility that you just might have a problem that someone else you don't even know will help you with. And, of course, what a golden opportunity to get to know other members of JACG one-on-one.

This project will only work if you will GIVE YOUR BIT. Charlie's number is (201) 469-6190. What are you waiting for?

Frank Pazel  
Editor-in-Chief, JACG Newsletter

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## MARK YOUR CALENDARS!!

### JACG Meeting Schedule

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June 14, 1986  
July 12, 1986\*  
August 9, 1986\*  
September 13, 1986\*

\*These meetings may not be at Bell  
Telephone Laboratories.



## THE VIEW FROM WHITE HOUSE.

The Presidents' message.  
by Bill Martin

HOT LINE TO THE PRESIDENT. - (201) 534-6349

Where did all the ST stuff come from? It may have appeared, to the casual observer, that our last meeting devoted considerable time to the ST, and it did. After spending four months virtually ignoring the ST, I felt it was time to devote at least part of a meeting to the machine. At the April meeting I counted about twenty hands out of the approximately 300 present. That's enough for a good SIG but not enough to monopolize a meeting. Speaking of SIG's, our ST SIG is almost non-existent due to lack of leadership. I do wish that a volunteer would step forward to take over and give it some direction. The only action we have seen lately is our librarian, Jim Budelman, who keeps knocking out those public domain disks. Thanks Jim! Also thanks to V.P. Scott Brause for giving the SunDog demo. Now that was an interesting ST program but I couldn't help having the feeling that "Lord British", (hizself) was going to jump out at any time and tell me that this was ULTIMA "X" (that's Roman numeral 10 for all you hexadecimal buffs). My apology for the misunderstanding understanding that occurred with Don Ursem and his demo of "ZOOMracks" (see Don's review elsewhere in this issue) but with the offer of the author, Paul Henkle, to do a live, "on site" demo, I couldn't resist.

A front page note in the Greenville Atari Computer Enthusiasts newsletter, "GRACE" reminded me of a program that I started up a few years ago in my Honda car club. "GRACE" calls it the "Big Brother" program but in the interest of fairness, I'll name ours, the BIG Brother/Sister program. Ours has gotten off to a roaring big start when member Charlie Miller volunteered to be the biggest brother of them all and coordinate the program. First, we need some volunteers, people who remember, (such as myself) how they tried to call Atari's 800 number for two days to find out what the file "CIOUSR" was supposed to do and why it doesn't show any pictures! Most of the questions a beginner would ask are simple, (to you), but a major obstruction, (to them). So, here's your chance to give a little bit back to the club. Call me on the hot line and I'll give your name to Charlie. As T.V. personality, Ed Sullivan, was so fond of saying, "Let's hear it out there?"!

I had the distinct impression that we caught our stalwart editor by surprise when we presented him with a plaque in honor of his 30th consecutive newsletter last month. Having been responsible for my car clubs newsletter at one time I remember the awesome (sorry Art!) task it was. The hardest job is getting it out by a deadline which occurs with un-natural regularity at the JACG. A tribute to the man and his magic. Thanks Frank!

With the exception of Frank Pazel's offer to have a meeting (September's) in his school, I've had no other offers. Does this mean that we will have to cancel July and August? Come on guys, and gals! Let's have some assistance!

Congratulations to the Eugene ACE of Eugene Oregon who garnered the Antic magazines "Outstanding User Group" title. Among those that were mentioned as one of the ten "...outstanding Atari users groups...active today" was our own "JACG". The Eugene ACE newsletter distinguishes itself by including a half dozen or so type-in programs every month, on type set light weight pages that they can mail first class for 22 cents. It was interesting to note that their April 86 issue had a 3/4 page, (1/4 inch black line enclosed) notice of insolvency due to high cost of-- setting up their BBS. I'm willing to help them out with a \$14 personal subscription. If anyone else cares to do the same, the address is 3662 Vine Maple Dr. Eugene, OR 97405. While your at it, say thank you to Scott for maintaining our own BBS at such a low cost.

A rumor on Compuserve is that one of the members talked to Happy on April 14th and was told that REV.7 is ready. Instructions are being printed and will be shipping in three weeks. That's May 5th on my calendar. My one question is, what will we have to complain about if it is issued on time? Another rumor is that Atari is coming out with a 3.5 inch drive for the 8 bit machines, has an 80 column device that's not a cart but a serial device and that the CP/M translator has actually been released and is selling in Europe. Today Germany, tomorrow...?

Many, many thanks to Mike Worner for donating those computer desks to the club to raise funds. They require that you put them together, and possibly do some painting, but for \$30.00, it's a steal. This offer is limited, and for JACG members only, so see Gary Gorski, club Sales Manager, before or after the meeting. It's cash, up front so a check, made out to JACG at this meeting will insure delivery at the next meeting. Thanks also to Bill De Santis, for picking up, moving and storing these monsters.

It appears that our move to incorporation has hit a brick wall again. If there is any member out there who is also a lawyer please come forward and volunteer. Maybe we can swing some free advertising in the newsletter in exchange for your service.

Will the member who volunteered to create an interface cable so that we can run the ST to an audio/video (composite) input, PLEASE call me on the hot line?

If there's anyone or anything out there that I've forgotten, I apologize. Let me know, (on the hot line) and I'll try to pick up the pieces in the next issue. In parting, I'll leave you with this quote that I read off the Atari newsnet: "Progress means replacing something wrong with something more subtly wrong."



## APRIL MEETING HIGHLIGHTS

Reported by  
Joseph S. Kennedy

The Question and Answer period was handled by Bob "hardware" Mulhearn this month. The meeting was opened by President Bill Martin. There were 230 responses to the questionnaire in the newsletter on the mailing of the newsletter. Based on these responses, beginning with the next issue the newsletter will be mailed third class. Those who want the newsletter first class will have to pay a \$6.00 surcharge for a year of first class mailings. The best way to get the newsletter is still to pick it up at the meeting. Advertising rates are to be raised on the first of May.

A plaque was presented to Frank Pazel on the occasion of the publication of the - THIRTIETH - issue of the newsletter with Frank as Editor. Thanks for a great newsletter Frank!! (Do I get that raise now Chief?)

Bill Brandt has completed an index of magazine articles on Atari for the years '81 to '85. This index covers 14 Synfile+ data disks and when printed 70+ pages. Bill will have it printed and available at the next meeting for under \$10 if possible. Thanks Bill!

Frank showed us a slot machine program from France that apparently was distributed by Levi's. Frank requested that anyone with foreign programs supply him with a copy if possible.

The club has 25 used computer desks for sale for \$30. The desks were donated by Mike Warner. Thanks Mike! Bill asked for volunteers for a computer big brother program for new members and most importantly for a coordinator for the program which would help new members who are new computer owners. Gary Gorski is the new Sales Manager for the group. Gary is the person to talk to for the computer tables. Mike Murphy presented several new designs for Club T-shirts. The best looked to be an outline of the state of New Jersey.

Software for our drawings has been donated by Software Spectrum and Gemini.

For the July, August and September meetings we will be without a meeting place as it stands now. Bell Labs is doing some remodeling. Frank Pazel will find out if we can use the Mountain Lakes High School, where he teaches (on Atari computers of course). More info will follow.

Atari, in their efforts to build their image and consumer support, have refused to allow us to use the Atari name when we incorporate. Way to go Jack; that's a good way to build public support, especially with your most loyal customers - the user groups!

Bill Martin demoed Print Master, a Print Shop clone for the ST. Print Master

has one definite advantage over Print Shop in that you can view the full card or whatever on the screen before printing it. The program sells for around \$32.00.

Scott Brause demoed Sundog on the ST. In this graphic adventure you are a galactic trader. The ship and the worlds you visit must be seen to be believed; they just can't be described. It's almost worth buying a ST.

Bill Wong demoed several utilities for the ST. One was a function key programmer. The other was a disk/program back-up.

Jim Callari and Eric Riech demoed Spy Versus Spy, Part II, from First Star for the 8-bit machines. This split-screen program takes up where the first Spy vs. Spy lets off. The spies are now on the island and searching for bomb parts. The graphics, when the island explodes, are great.

Joe Kennedy demoed Golf from the Club's disk library. This was definitely a case of the bug showing up at the wrong time as the program locked up. He also demoed Graphics Shop from the Antic catalog. This utility for Print Shop allows you to convert graphics screens made from other programs to Print Shop icons. You can use the full screen or just a portion of the screen.

Jerry Frese displayed the movie Dancin' Boots that he prepared with the program Movie Maker. The short movie took over two weeks to prepare. Jerry now professes renewed respect for the Disney animators who made full length animated movies.

Dave Noyes demoed Silent Butler from Atari. Silent Butler requires an 8-bit machine with 64K or more and a 1050 disk drive and, most of all, plenty of time to wait while it loads. This program will balance your checkbook; keep track of appointments; print checks, etc. The most serious deficiency, other than the long load time and the need to change disks, is that once you enter information you cannot change it. Yep! That's right, if you discover at a later time that you made a mistake you can't change it. A major mistake on the part of the programmer.

A change in the scheduling puts the Atari Safari off until the fall.

\*\*\*\*\*  
GIVE A BIT!!  
\*\*\*\*\*



**JAGG HOTLINE**  
**534-6349**  
**THE LATEST NEWS**  
**24 HOURS A DAY**



## Zoomracks A Review

by Donald Ursem - JACC

Zoomracks, despite the name, is neither a Saturday morning cartoon superhero, a college cheer, nor a jet propelled moose. It is, I think, a database. It is a rather powerful, yet odd one. Some of this comes from the 'feel' of the package. It has the feel of a demonstration, or a thesis, instead of an intuitively easy tool. For example, this comes through in the tutorial's invitation to skip around and 'explore the features'; yep, there are surely lots of features there - but it's kind of similar to being invited to learn the UNIX VI editor by just starting it up and typing to see what happens. In both situations, one is shortly adrift, wondering at what all that stuff flashing by on the screen is supposed to be doing. And the same thing comes across in the manual which - on page two, already - is telling you that what you've bought is a rack metaphor, a whole new way of organizing information. (All I wanted was a cardfile, thank you - or maybe an alliteration; certainly not a metaphor). Soon after this, we are coining a new jargon to go with the thesis - files become racks, then 'zoomracks' (guess why); records are forms, then 'quickcards'; fields become 'fieldscrolls'.

If I am impatient, it's because, considering that the author of this product is an authority on user friendly software, I kind of expected HIS offering would have more of the warm and immediately usable feeling of an Atariwriter or a PFS FILE. Instead, what we have here is like the dipolar combination of obvious power and terse difficulty of our old friend Dataperfect. (That was a simile, folks).

Don't get me wrong, lots of people love Data Perfect. (After they master it). Lots of people will probably love Zoomracks, too. (After they master it). It does have lots of features. You will need to read the 177 page manual through two or three times, and slowly begin to adjust to the many key commands. (Zoomracks is not mnemonic; it uses function keys - all ten; and regular keys; and alt-keys, and escape sequences; and control keys). And then the power may emerge for you.

Basically, Zoomracks represent physical racks that might hold decks of index card forms. Each form can hold freeform text in labeled side-scrolling lists called fieldscrolls. Each list can have up to 250 data lines, each up to 80 columns. This is reminiscent of the card-at-a-time text scheme of the old Atari Home Filing Manager, or of Visidex. But the added dimension is a set of commands to zoom in to one form or list, then back out to view all the overlapped forms in a 'rack', each with just its first line showing. Or zoom further out to see several adjacent racks containing different types of card records. This concept lets you browse data and visually pick (yep - with the mouse, if you want) the record you want.

The way all this global information content is squeezed onto one screen is via automatic vowel compression, so that the data content is always displayed, to some degree, in the available space. This is reminiscent of deciphering the old 'If u kn rd ths u kn gt a gd jb' advertisements, those bygone adornments of the New York subways. But it is effective.

The handling of data entry, as well as navigation among adjacent forms and racks, is word-processor-like, including directional commands, word wrap, insert/delete, and even cut and paste text functions. There are sort (ascending only) and search (single word or phrase) commands. There is a rudimentary keyboard macro facility, so that you can set up a 'canned report' sequence as you might in a spreadsheet. There is no procedural language, so decoding what you set up weeks ago may well be an adventure in undocumentation.

Zoomracks does not have a real report writer capability, but can dump a card, or a rack of cards as a print output, with limited screen height/width specification; or the same information can be converted from binary (internal) format to an ASCII disk file for use in other wp or database packages.

The only noted bug in the package is that a printer command, if the printer is not connected, locks up the system, and you have to reboot. The PC DOS version of Zoomracks has the same noted behavior, so we are at least being consistent. The speed of screen update, on the PC version is apparently quite slow; on the Atari ST, it paints the screen at what looks to be about 2400 baud - not very impressive, but clearly usable.

The documentation is well written, but because of the great variety of function key commands, you will be looking things up a lot. The manual is not really set up for this; it focuses on tutorial needs. A brief reference card would be useful; you may want to make your own. Like Wordstar, there is a context sensitive onscreen help; you can either keep it enabled and showing, or turn it off.

In sum, this is a feature filled package; the author tries to do a credible job documenting and supporting it. The main difficulty is in the choice of a multi-modal, function key intensive implementation, which makes both of these tasks, and your initial learning curve, fairly difficult. Be prepared to go slowly and spend a lot of time before you master Zoomracks fully. It's kind of like learning assembly language. But then you can brag about it later.

**HAVE YOU RENEWED  
YOUR MEMBERSHIP?**

**CHECK YOUR MAILING LABEL  
FOR MEMBERSHIP EXPIRATION DATE**



1000C+200-C+AT=  
4\*300 BAUD

by Bill Martin - JACG  
(c) 1986

(A review intended for previous MPP owners.)

When sudden death came to my MPP 1000C modem last week, I went into a panic. What would I do? Buy a 1000E for about \$60.00? No, I was tired of waiting for what seemed endless hours to download a Compuserve file. It was time for 1200 baud; I was ready for 1200 baud; but which way should I go? Gemini was selling a Hayes' compatible 1200 baud modem (an AVATEX 1200) for \$99.95 but I would need an 850 interface for another \$109.95 plus cable at \$22.95 which added up to \$232.85 plus tax, without software. I don't need an interface because I use a third party printer interface with a 64K buffer. I waited another 3 days and returned to the store. "O.K.", I said hesitantly, "I'll take it". My worst fear was that there was no software and that I was going to have to learn, or worse, write another program. I smiled numbly as I picked up the new modem. "You know that the SUPRA 1200 came in the other day", added Sarah, the owner's wife. My mind did a flip as I walked to the rear of the store where she had pointed. There it was, the familiar blue box that represented the Phoenix, arisen from the deceased MPP. "I wonder", I thought to myself as I eyed the shrink wrap. "Could it?... Can I open it up Sarah?", I begged! Her nod was enough to get me ripping at the heat sealed wrap like a five year old opening a birthday present. "It's over \$219.00", I explained to my wife; "but it's got it's own interface, and software and it seems to have the same commands!", I whispered excitedly. I was hooked! The fact that I wouldn't have to learn a new set of commands was enough to convince me. I paid with a check and set out for home.

The modem was set up to go within 10 minutes of arrival at my house. Unlike the old MPP modems, the interface connects directly with the serial port, not the joystick port. A nice feature is that it has an extra serial port so that it doesn't have to be the last peripheral on the daisy chain. A nice touch! Besides the usual free time from Compuserve and Delphi there is included not one, but two manuals. The first, a 29 page "1200 Modem USERS GUIDE" that appears to have been supplied by the manufacturer (AVATEX 1200). Sound familiar? It should! It's the same modem and according to the book it works with Apple, IBM and Commodore. The name AVATEX appears on the bottom of the modem but not in the guide. This book describes the modem and its functions including set up, technical support and operation. Yes, it even includes a basic program to get on line at 300 baud. Unless I read it wrong, it appears from this manual that 1200 baud is only available for MS/DOS but fear not! The second manual (25 pages) is the "SUPRA Corporation Operator's Manual (with) Smart Terminal software". This guide doesn't describe the features of the modem itself, just the software. The easiest way I found is to refer to page 8 of the modem users guide so you can find out what

the led's mean, then proceed to boot and run. If you have ever used the MPP 1000C or 1000E, you are ON-LINE. The screen commands and prompts are the same format! Nothing else to learn, no strain, all gain!

There were some minor differences such as a timer. There are also some problems such as a timer that doesn't seem to work once you are in "Terminal" mode and a re-dial (if busy) that doesn't seem to work at all. X-Modem on Compuserve went well and the buffer save also performed without a hitch. One Caveat. If you call SUPRA with a problem, you will probably get a stonewall. My experience with both MPP and SUPRA is that they don't answer their mail and that their technical staff knows less than I do. The response I got when I called with my MPP 1000C problem was, and I quote, "I don't know anything about it. They were made to our specs. by another company and I don't even have a schematic."

One thing I did was to format a new disk and write DOS 2.5 together with the XE Ram disk commands. I then copied using the "C" command from DOS, all the files that came on the "Smart Terminal" disk that was supplied with the modem. I now have my own version that supports "64 and 80 column" software displays together with a Ramdisk that will support a quick transfer of the buffer capture and store it until I am off-line. (See JACG news letter, December, 1985, page 12, for a complete description)

The end result is that I am happy with my latest acquisition because it (generally) works as advertised and I didn't have to learn a new skill. The minor problems previously mentioned are not enough to change my personal good value rating. Sure, you can probably cut the price down by making your own interface and cables but as a previous MPP owner, I was looking for convenience. By the way, my MPP 1000C has found it's way to the club parts bin of the newly created co-op. A fitting tribute for a fine product that gave me three years of service.



Newsletter Editor, Frank Pazel, receives a plaque from JACG President Bill Martin at the April meeting. Bearing the new JACG green and gold medallion the engraved message reads "JACG to Frank Pazel, Editor-in-Chief, with grateful appreciation on this, the occasion of his 30th consecutive newsletter, April 1986."



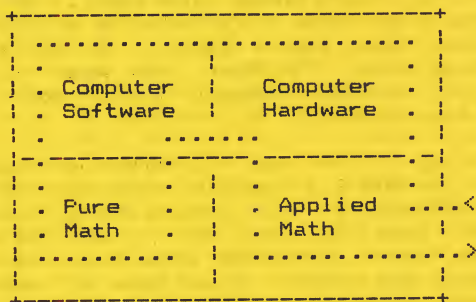
# The Mathematics of Mathematics (6)

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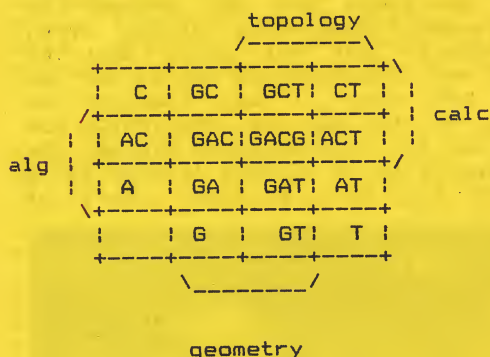
All people are divided into two classes, according to writer Robert Benchley. Those who divide all people into two classes. And those who don't.

Mathematicians also fall into two classes: pure mathematicians, and applied mathematicians. How do they relate to one another? An interesting question that deserves an answer.

We have seen that we can create a precise (if Procrustean) model of the mathematical sciences as a closed system with one input and one output port.



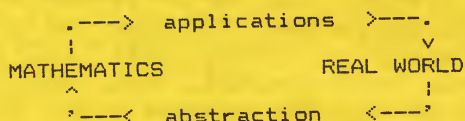
We have also seen that we can model the pure, or abstract, portion of mathematics with a Karnaugh map or Veitch diagram that defines precisely the interrelations of its four dimensions: geometry, algebra, analysis (or calculus), and topology. One could spend a lifetime studying mathematics, but one would never know how the pieces fit together without a model of some kind.



What is applied mathematics? How does it fit into this framework?

Our aim is to focus attention on the conceptual structure of the mathematical sciences and the interconnections between its parts. The interface between pure and applied mathematics happens to be one of the crucial links.

What we have is a continuous feedback loop that has been in running incessantly for several thousand years. As long ago as 1800 BC the Babylonians investigated the abstract properties of numbers.



Note two principal themes: There is a continuous interaction between hard problems in nature and the invention of new mathematics (but the application of the mathematics may take up to a century). Secondly, no one can predict what mathematics will be useful -- experts in number theory (once regarded as recreational mathematics) are in demand today to develop military enciphering schemes.

Why is the loop effective? Harvard math professor Arthur M. Gleason puts it this way: 'Mathematics is the science of order -- its object is to find, describe and understand the order that underlies apparently complex situations. The principal tools of mathematics are concepts which enable us to describe this order. Precisely because mathematicians have been searching for centuries for the most efficient concepts for describing obscure instances of order, their tools are applicable to the outside world; for the real world is the very epitome of a complex situation in which there is a great deal of order.'

The origin of the loop goes back many centuries. Our distinguished math historian Morris Kline spells it out more clearly than anyone else. In his book on Mathematics and the Physical World he notes: 'It was the Greeks of the sixth, fifth, and fourth centuries BC, the people who occupied roughly the area of modern Greece, who really made the great discovery as to how and to what extent mathematical reasoning can be effective. Modern Western civilization learned this secret from the Greeks.'

'The Greek idea is basically simple. One observes nature and finds that certain simple forms such as lines, triangles, and circles occur repeatedly. The heavenly bodies are spheres; light seems to travel in straight lines; the surfaces of lakes are flat; the sides of buildings are rectangles. Number or quantity is also suggested repeatedly by collections and sizes of objects. These concepts of number and geometrical forms, in view of their very prevalence, the Greeks deemed worthy of study.'

'The fact in itself was a significant discovery, but the next discovery of the Greeks proved to be even more momentous. They observed that certain facts about these concepts are obvious and seemingly basic. Circles are determined by choosing a center and a radius; any two right angles are always equal; equal numbers added to equal numbers or equal lengths added to equal lengths yield equals; and so on.

'Why not select the most obvious of these facts and see what reasoning could deduce from them? Surely if some new facts could be derived, these facts would apply to ALL those physical objects that possessed the basic properties in the first place. If the area of a circle could be shown by reasoning to be Pi times the square of the radius, then the area of any circular piece of land should also be Pi times the square of its radius.

'Further, perhaps by reasoning one could discover new facts which observation alone would not suggest. These advantages and many more the Greeks expected to derive from reasoning about common concepts on the basis of clearly evident facts. This is the germ



of the great Greek discovery, perhaps the greatest discovery man has ever made. Reasoning can produce knowledge that not only covers a multitude of cases in one swoop but may produce physically meaningful information that is entirely unforeseen."

Larry Joel Goldstein in his book on Abstract Algebra (Prentice-Hall, 1973) makes the same point: "The great contribution of the Greeks to mathematics was, of course, the axiomatic method, which must rank as one of the most original creations in the history of human thought."

What were some of the useful results of this centuries-old feedback loop? Here are some of the high spots from a long history of mathematical physics, computation, communication and engineering:

1. The Egyptians used geometry for land measurement, which is exactly the meaning of the Greek word (geo, metrein).
2. Napier invented logarithms as a calculating aid.
3. Newton developed the calculus and laid the foundations of the science of mechanics.
4. Fourier used linear combinations of trigonometric functions to study heat conduction.
5. Euler's Koenigsberg bridge problem in 1735 laid the basis for graph theory, used by Kirchhoff in 1847 to study electrical networks and Cayley in 1857 to study organic chemistry.
6. Cayley's matrices found a use in 1925 in Heisenberg's matrix mechanics. Schroedinger used the Sturm-Liouville theory of differential equations to develop his wave mechanics. In 1927 von Neumann unified the two theories in terms of linear operators in a complex Hilbert space.
7. Group theory originated by Galois was used by Gell-Mann to predict the existence of an elementary particle discovered in 1964.
8. Oliver Heaviside was faced with the practical problem of understanding the transmission and attenuation of waves in the trans-Atlantic cable that was laid in 1866. He developed his operational calculus, in which he replaced linear differential equations by linear algebraic equations.
9. Riemann's geometry was adopted by Einstein as a basis for his general theory of relativity.
10. Poincare's study of singular points and limit cycles has led to the solution of many problems in servo-mechanisms and automatic control.
11. The theory of functions of a complex variable, an abstraction developed by Gauss, was later used in electrical engineering.
12. Work by Weierstrass and others on several complex variables found use in quantum field theory: collisions of elementary particles were described by piecewise analytic functions of several complex variables.
13. Probability theory developed by Vieta, Pascal and Laplace was used later by Maxwell and Boltzmann in the study of Brownian motion.
14. Distribution theory invented by Laurent Schwartz helped solve many physical problems.
15. Systems of linear algebraic equations, the basis of linear programming, have been applied to operations research, managerial science, and control theory.

You will find these advances described in greater detail in the article by Dorothy L. Bernstein on 'The Role of Applications in Pure Mathematics' in the April 1979 issue of the American Mathematical Monthly.

This is a vast subject and no one has all the answers. There is a good beginning, however, in a recent article which looks at the history from the perspective of applied mathematics and the real world. Professor Arthur M. Jaffe, also from the math department at Harvard, has a 75-page article in Siam Review of October 1984 on 'Ordering the Universe: The Role of Mathematics.'

There is another view, from the perspective of the abstract mathematician. Professor Saunders Mac Lane in his new book on the structure of mathematics entitled 'Mathematics: Form and Function' devotes a 50-page chapter to the interconnections between mathematics and mechanics, arising from human observations over the years of the motions of planets and projectiles, their oscillations and rotations, and the motions of the spinning top. 'The calculus was developed by Newton in order to tackle problems of mechanics, especially those of celestial mechanics... Today there is an amazing confluence of the gauge theories in Physics (for the Yang-Mills equations) and the geometrical theory of connections on fiber bundles.'

If we fail to master the language of science, then all else is irrelevant.

Therefore we can attempt to sketch the conceptual structure of the mathematical sciences, but we will leave a gaping hole if we focus on the EXACT sciences and fail to examine in detail the INEXACT sciences ... So ...



"JUST YESTERDAY I WAS KING OF SILICON VALLEY!"

\*\*\*\*\*  
# JACQ OUTLINE 534-6349 #  
# GET THE LATEST NEWS ON ATARIWORLD #  
# \*\*\*\*\*



## Fun With Foobles:

### Fooblitzky

by Tom Pluck - JACG



What's the first thing you think of when you hear INFOCOM? Text, text, no graphics, but a lotta witty text, ya... Stereoype no more. They've come out with Fooblitzky, a graphics board game with mah-velous revolutionary graphics. No, hell hasn't frozen over, but INFOCOM's come out with a sure-fire hit for the whole family.

Ok, it's a dog eat dog world, and unfortunately, you are a dog. And up to three other dogs (your friends & family, no offense intended) are your opponents. The currency is foobles and the town is Fooblitzky. In the variety of stores that are around town, there are eighteen items for sale. When the game starts, each player picks an item and the computer picks the rest. The object of the game is to collect these four secret items by cheating, tricking, and downright lying to your friends. You can buy them or steal 'em - either way, it's okay. If you run out of foobles, work at a restaurant or sell some unneeded items. Check out your lockers for the secret item that you picked- it might be there. Ride the UGH (Underground Gliding Highway). Get hit by cars. Meet the Chance Man and get a free turn, robbed, given a correct item, or squashed by a falling piano. Sounds like fun, eh?

It is. The graphics are excellent. I mean Penguin Software is positively biting their nails right now. The animation is great, and actually funny sometimes. You get four erasable marker boards (the kind in your kitchen that says "Things To Do:" on it) to write down clues on. Watch your board- cheating is legal here. I want you to know that right now, Fooblitzky is available in stores. Originally it was only available to subscribers of INFOCOM's New York Times for the hefty price of \$44.95- which probably won't lower for quite some time.

I mean it, you should buy this game if this review has you literally begging to see a copy (you've retrieved your car keys and the map to your local computer store by subconscious command). Remember, you need 2 - 4 players (If you have a lack of friends and your family no longer returns your calls, tough nuggies). Fooblitzky is a board game, not a bored game. So you can play it again and again. And again and again and again...it's just plain great.

This review submitted by: Pluck Rogers of the 25th century (A.K.A. Rover)!!!!

## PRINT CHARACTERS IN BASIC IN FOUR HEIGHTS

by Dennis Palumbo - JACG

If you have a Panasonic dot matrix printer or compatible (Epson, Gemini, Legend, Mannesmann Tally, etc.) you presently can only print characters in two heights. By incorporating this subroutine into your BASIC programs you will be able to produce two new character heights and double your selection of character sizes. Without this subroutine the two character heights available are standard height about seven points high and half-height (superscript/subscript) about fourpoints high. Printers use a unit of measurement in printing called a point which is equal to 1/72". The new character heights that are produced using this program are five and six points high. The five point size has 64 characters consisting of capital letters, numbers, punctuation and miscellaneous characters. The five point lower case letters that were created were unreadable and were not made part of the subroutine. The six point size includes 80 characters consisting of capital and lower case letters, numbers, punctuation and miscellaneous characters.

The subroutine was designed for a Panasonic printer or a compatible printer. If you don't own one of these printers you should be able to change the subroutine to work on your own printer. The only limitations to modifying this subroutine to work on your printer is your printer must have the capability to create at least 40 custom downloadable characters and the character matrix must be eight dots high by nine dots wide. Just use the line by line description that follows and change the printer control codes for the Panasonic to your own printer control codes.

This subroutine was developed to help me with my occupation - Forms Design for a large Police Department. The type of forms I mean are the printed documents with blank spaces that are fill in. Up to about eight months ago I designed forms by drawing a new form and/or cutting and pasting the old forms. Now I write a BASIC program that prints out a neat readable draft of the form. Once you know and understand the control codes for your printer and how to use them the process is not as complicated as it may seem. If I ever have to change the form it's a simple process to make the revisions in the BASIC program and then print another copy of the form. Figure 1 is an example of one of these BASIC programs. When the program in figure 1 is RUN the form (Figure 2) will be printed. The vertical lines and check off boxes in figure 2 are not part of the program and are drawn in after printing. To save space the figure 1 listing does not include listings 0,1,2,3 or 4. I'm hoping that in the future the new 520ST computer will make the writing of a BASIC program obsolete. When the right software is written for the 520ST it will make the forms design procedure easier and quicker.

There are six listings in this article. Listings 0,1,2,3 and 4 are part of the



subroutine. Listing 5 is a BASIC program that prints out a sample of the different character heights and widths available when using this subroutine. All listings are LISTed to disk to make it possible to "chain" some or all of the listings together in memory. Listings 1,2,3 and 4 can be used independently or all together as long as listing 0 is part of the subroutine. You can conserve memory in your programs by only using the listings you need. Example: You want to print five point type in capitals and numbers. You ENTER from disk to the computers memory listings 0 and 1 and incorporate these into your program. If you later decide you want to add the five point miscellaneous characters to the program, you would then ENTER into the computers memory, listing number 2. The program is set up as a subroutine and contains a number of smaller subroutines. You write your BASIC program using line numbers 0 to 9999, the line numbers 10000 to 11000 are reserved for the subroutine. Whenever you want to print in either five or six point height characters you would add the proper GOSUBs to the BASIC program in the correct places.

A short description of each listing follows:

Listing 0 - Is always part of the subroutine.

Listing 1 - PRINTs five point capital letters, numbers and some punctuation, hereafter abbreviated five point caps.

Listing 2 - PRINTs five point punctuation and miscellaneous characters.

Listing 3 - PRINTs six point capital letters, numbers and some punctuation, hereafter abbreviated six point caps.

Listing 4 - PRINTs six point lower case letters, punctuation and miscellaneous characters.

Listing 5 - A demonstration of how to use this subroutine in a BASIC program. Notice that your program would be written using program lines 0 to 9999.

Type in the listings and remember to LIST them to disk. I used the file name "D:CHAR and added an extension to the file name using the same number as the listing. Example: Listing 2 would be named "D:CHAR.2" and listing 4 would be named "D:CHAR.4". Once all six listings have been typed and checked its time to demonstrate how to use the subroutine. Type NEW and then press the RETURN key, now ENTER from disk all six listings. In the computers memory these six small programs will produce one long chained program. Make sure your printer is turned on and type RUN and press the RETURN key. The printer will start printing in different widths and heights and once in a while will seem to pause. This pause or delay is the computer creating the strings and loading and releasing of the custom characters. Once all four strings have been filled the delay in printing will be lessened.

To incorporate this subroutine into your own BASIC programs start by picking your first program line number and adding the

command GOSUB 10000. This will DIMension the strings that will store the custom characters. The next program line number will contain a GOSUB 10010 which OPENS a channel to the printer. Decide what size characters you want to print and look at Figure 3. This chart explains when and were you should put GOSUBs to print in five and six point type. The first line of four GOSUB numbers will READ data from the data statements and create the strings to store the custom characters. The next line of four numbers will Replace the original characters with the custom characters. The last line of four numbers will Release the custom characters and restore the original characters.

You have decided you want to print in six point caps, this is the third column from the right, so you use the numbers in this column. Your next program line would contain a GOSUB 10163 to READ and create the six point caps strings and Replace the original characters. Repeat this procedure whenever you want to add a PRINT #7;" command and enter the word or words in capital letters and/or numbers that you want to print. After all printing in six point caps is completed you must Release the custom characters by entering a GOSUB 10223 which would Restore the original characters. Repeat this procedure whenever you want to PRINT one of the other three columns. Once the READs GOSUB has been executed it is not necessary to repeat this GOSUB, go directly to the Replace GOSUB. A CLOSE #7 command is entered at the end of the program.

A line by line description of all six listings chained together is explained below:

LINE 100 Start the subroutine by entering a GOSUB 10000. There should be only one GOSUB 10000 per program otherwise an error # 9 - Array or String Dimension Error will occur.

LINE 110 On a separate line enter a GOSUB 10010.

LINE 125 Enables double width, double print and underlining modes, PRINTs text and disables underlining. The control characters in the beginning and end of the ? #7 commands throughout the listings are the printer control codes. These codes tell the printer in what type, style and boldness to print the text.

LINE 135 PRINTs seven point text and READs and Replaces six point caps DATA.

LINE 145 PRINTs six point text, Releases six point caps and READs and Replaces five point caps text.

LINE 155 PRINTs five point text and Releases five point caps.

LINE 165 Enables subscript mode (four points high), PRINTs subscript text and disables subscript mode.

LINE 175-215 Similar to lines 125-165, except PRINTing is in elite mode and uses GOSUBs 10213 and 10191 instead of GOSUBs 10163 and 10141 because strings have already been created for six point caps.



LINE 225 Enables compressed and underlining modes, PRINTs text and then disables underlining.

LINE 235 PRINTs seven point caps text and suppresses a line feed.

LINE 245 PRINTs seven point lower case text and Replaces six point caps characters.  
LINE 255 PRINTs six point caps text, suppresses a line feed, Releases six point caps and Replaces six point miscellaneous characters.

LINE 265 PRINTs six point lower case text, Releases six point miscellaneous characters and Replaces 5 point caps.

LINE 275 PRINTs five point caps text and Releases same.

LINE 285 Enables subscript mode, PRINTs text and suppresses a line feed.

LINE 295 PRINTs subscript text, then disables subscript, compressed and double width modes.

LINE 305-385 Similar to lines 225 to 295 except PRINTed in pica mode and uses GOSUBs 10224 and 10152 instead of GOSUB 10174, because string has already been created for these characters.

LINE 395 Enables elite and underlining mode, PRINTs text and disables underlining.

LINE 405 PRINTs seven point caps text and suppresses a line feed.

LINE 415 PRINTs seven point lower case text and Replaces six point caps characters.

LINE 425 PRINTs six point caps text, suppresses a line feed, Releases six point caps and Replaces six point miscellaneous characters.

LINE 435 PRINTs six point lower case text, Releases six point miscellaneous characters and Replaces five point caps.

LINE 445 PRINTs five point caps, suppresses a line feed, Releases point caps and Replaces five point miscellaneous characters.

LINE 455 PRINTs five point miscellaneous characters and Releases same.

LINE 465 Enables subscript mode, PRINTs text and suppresses a line feed.

LINE 475 PRINTs text, disables subscript mode, enables pica and compressed modes.

LINE 485-565 Same as lines 395 to 475 except PRINTed in compressed instead of elite mode.

LINE 9990 CLOSEs channel #7 and ENDs program.

LINE 10000 DIMensions strings that will store custom downloadable characters and sets variable s1 equal to ten.

LINE 10010-10030 Opens channel #7 to the printer and sets single direction printing. Single direction is used to keep the columns

of characters lined up one above the other.

LINE 10141-10151 READs data statements starting at line 10301 and creates the string that defines five point capital letters, number and some punctuation.

LINE 10152-10162 READs data statements starting at line 10502 and creates the string that defines five point punctuation and miscellaneous characters.

LINE 10163-10173 READs data statements starting at line 10603 and creates the string that defines six point capital letters, numbers and some punctuation.

LINE 10174-10184 READs data statements starting at line 10804 and creates the string that defines six point lower case letters, punctuation and miscellaneous characters.

LINE 10191 Replaces the original characters in the printer with the custom five point caps characters.

LINE 10201 Releases the custom 5 point caps characters and restores the printers original characters.

LINE 10202 Replaces the original characters in the printer with the custom five point miscellaneous characters.

LINE 10212 Releases the custom 5 point miscellaneous characters and restores the printers original characters.

LINE 10213 Replaces the original characters in the printer with the custom six point caps characters.

LINE 10223 Releases the custom six point caps characters and restores the printers original characters.

LINE 10224 Replaces the original characters in the printer with the custom six point miscellaneous characters.

LINE 10234 Releases the custom six point miscellaneous characters and restores the printers original characters.

LINE 10301-10451 Data statements to create the custom five point caps characters. The data is in multiples of ten numbers. The first number is the decimal code of the character that you want to replace with your new custom character. The next nine numbers define which pins on the print head will fire and strike the ribbon creating the new custom character. Page 4-52 of the Panasonic KX-P1091 Operating Instructions describes in more detail how these nine number values are obtained.

LINE 10502-10582 Data statements to create the custom five point miscellaneous characters.

LINE 10603-10753 Data statements to create the custom six point caps characters.

LINE 10804-10944 Data statements to create the custom six point miscellaneous characters.



100 GOSUB 10000:REM LISTING 0

110 GOSUB 10010

9990 CLOSE #7:END

10000 DIM C\$\$(400),C\$\$(240),C\$\$(400),C\$\$(400):\$L=10:RETURN

10010 CLOSE #7:OPEN #7,0,"P:"

10020 ? #7;"E";:REM SINGLE DIRECTION

10030 RETURN

10141 C\$=-"" :RESTORE 10301:REM LISTING 1

10151 FOR I=1 TO 400:READ CH:C\$(I,I)=CHR\$(CH):NEXT I:GOTO 10191

10191 FOR X=0 TO 39: ? #7;"E";C\$(X\*5L+1,X\*5L+10);:NEXT X:RETURN

10201 FOR X=0 TO 39: ? #7;"E";CHR\$(ASC(C\$(X\*5L+1,X\*5L+11)));:NEXT X:RETURN

10301 REM DATA TO CREATE 5 POINT CAPITAL LETTERS & NUMBERS

10311 DATA 65,2,4,12,20,36,20,12,4,2,66,34,62,42,42,42,42,20,0,67,28,34,34,34,34,34,0

10321 DATA 68,34,62,34,34,34,34,28,0,69,62,42,42,42,42,42,34,34,70,62,40,40,40,40,40,32,32

10331 DATA 71,28,34,34,34,34,42,42,12,72,62,8,8,8,8,8,8,62,73,0,0,34,34,62,34,34,0,0

10341 DATA 74,4,2,2,2,34,34,60,32,32,75,62,8,8,8,20,20,34,34,34,76,62,2,2,2,2,2,2,2

10351 DATA 77,62,0,16,16,8,16,16,62,0,78,62,0,16,16,0,4,4,62,0,79,28,34,34,34,34,34,28

10361 DATA 80,62,40,40,40,40,40,16,0,81,28,34,34,34,42,34,4,32,26,82,62,40,40,40,40,44,42,18,0

10371 DATA 83,16,42,42,42,42,42,42,4,84,32,32,32,32,62,32,32,32,85,60,2,2,2,2,2,2,2,60

10381 DATA 86,32,16,8,4,2,4,8,16,32,87,60,2,4,8,16,8,4,2,60,88,34,0,20,8,8,8,20,20,34

10391 DATA 89,32,0,16,8,14,8,16,16,32,90,34,34,38,34,42,34,50,34,34

10401 DATA 48,0,20,34,34,34,34,20,8,49,0,2,18,2,62,2,2,2,0,50,18,36,34,42,42,42,42,42,18

10411 DATA 51,34,34,34,42,42,42,42,20,8,52,4,12,20,36,36,62,4,4,4,53,58,42,42,42,42,42,36,0

10421 DATA 54,20,42,42,42,42,42,42,4,55,32,32,32,32,34,36,40,48,32,56,20,42,42,42,42,42,42,20

10431 DATA 57,16,42,42,42,42,42,42,28

10441 DATA 44,0,0,0,1,3,2,0,0,0,45,0,8,8,8,8,8,8,46,0,0,0,0,2,2,0,0,0

10451 DATA 63,16,32,32,32,34,40,40,40,16

10152 C\$=-"" :RESTORE 10502:REM LISTING 2

10162 FOR I=1 TO 240:READ CH:C\$(I,I)=CHR\$(CH):NEXT I:GOTO 10202

10202 FOR X=0 TO 23: ? #7;"E";C\$(X\*5L+1,X\*5L+10);:NEXT X:RETURN

10212 FOR X=0 TO 23: ? #7;"E";CHR\$(ASC(C\$(X\*5L+1,X\*5L+11)));:NEXT X:RETURN

10502 REM DATA TO CREATE 5 POINT PUNCTUATION & MISCELLANEOUS CHARACTERS

10512 DATA 33,0,0,0,0,58,0,0,0,0,34,0,0,48,0,0,0,48,0,0,35,20,62,20,20,20,20,62,20

10522 DATA 36,16,42,42,42,62,42,42,42,4,37,34,0,36,0,8,0,18,0,34,38,0,20,42,34,42,18,6,2,2

10532 DATA 39,0,0,0,0,48,0,0,0,0,40,0,0,0,28,34,0,0,0,0,41,0,0,0,34,28,0,0,0,0

10542 DATA 42,0,8,42,28,8,28,42,0,0,43,0,8,8,62,8,8,8,47,0,0,2,4,8,16,32,0,0

10552 DATA 58,0,0,0,18,18,0,0,0,0,59,0,0,1,19,18,0,0,0,60,0,0,8,20,0,34,0,0

10562 DATA 61,0,20,20,20,20,20,20,0,62,0,0,34,0,20,0,8,0,64,28,34,34,34,42,42,42,16

10572 DATA 91,0,0,62,34,34,34,34,0,0,92,0,0,32,16,8,4,2,0,0,93,0,0,34,34,34,34,62,0,0

10582 DATA 94,0,0,16,0,32,0,16,0,8,95,2,2,2,2,2,2,2,2,124,0,0,0,62,0,0,0,0

10163 C\$=-"" :RESTORE 10603:REM LISTING 3

10173 FOR I=1 TO 400:READ CH:C\$(I,I)=CHR\$(CH):NEXT I:GOTO 10213

10213 FOR X=0 TO 39: ? #7;"E";C\$(X\*5L+1,X\*5L+10);:NEXT X:RETURN

10223 FOR X=0 TO 39: ? #7;"E";CHR\$(ASC(C\$(X\*5L+1,X\*5L+11)));:NEXT X:RETURN

10603 REM DATA TO CREATE 6 POINT CAPITAL LETTERS & NUMBERS

10613 DATA 65,6,12,20,36,60,36,20,12,6,66,66,126,82,82,82,82,82,44,0,67,60,66,66,66,66,66,66,0

10623 DATA 68,66,126,66,66,66,66,66,60,0,69,126,82,82,82,82,82,82,66,66,70,126,80,80,80,80,80,64,64

10633 DATA 71,60,66,66,66,66,66,82,82,28,72,126,16,16,16,16,16,16,126,73,0,0,66,66,126,66,66,0,0

10643 DATA 74,4,2,2,2,66,66,124,64,64,75,126,16,16,16,40,40,68,0,2,76,126,2,2,2,2,2,2,2

10653 DATA 77,126,64,32,32,16,32,32,126,0,78,126,0,32,16,8,4,2,0,126,79,60,66,66,66,66,66,66,0

10663 DATA 80,126,80,80,80,80,80,80,32,0,81,60,66,66,66,66,74,66,4,64,58,82,126,80,80,80,80,84,34,0

10673 DATA 83,32,82,82,82,82,82,82,12,84,64,64,64,64,126,64,64,64,85,124,2,2,2,2,2,2,2,124

10683 DATA 86,96,16,8,4,2,4,8,16,96,87,124,2,4,8,16,8,4,2,124,88,66,4,40,16,16,16,40,4,66

10693 DATA 89,64,0,32,16,30,16,32,32,64,90,66,70,66,74,66,82,66,98,66

10703 DATA 48,24,36,66,66,66,66,36,24,49,0,2,34,2,126,2,2,2,0,50,38,74,66,82,82,82,82,82,34

10713 DATA 51,66,66,66,82,82,82,82,44,0,52,8,24,40,72,72,126,8,8,8,53,114,82,82,82,82,82,76,0

10723 DATA 54,60,82,82,82,82,82,82,12,55,64,64,64,66,68,72,80,96,64,56,44,82,82,82,82,82,82,44

10733 DATA 57,32,82,82,82,82,82,82,60

10743 DATA 44,0,0,0,1,7,6,0,0,0,45,0,16,16,16,16,16,16,46,0,0,0,0,2,2,0,0,0

10753 DATA 63,32,64,64,64,74,64,80,64,32



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10174 C6L$="":RESTORE 10004:REM LISTING 4
10184 FOR I=1 TO 400:READ CH:C6L$(I,I)=CHR$(CH):NEXT I:GOTO 10224
10224 FOR X=0 TO 39:? #7;"EY";C6L$(X*5L+1,X*5L+10);:NEXT X:RETURN
10234 FOR X=0 TO 39:? #7;"EZ";CHR$(ASC(C6L$(X*5L+1,X*5L+11)));:NEXT X:RETURN
10004 REM DATA TO CREATE 6 POINT LOWER CASE LETTERS & PUNCTUATION
10014 DATA 97,4,10,10,10,10,10,10,12,2,98,126,10,10,10,10,10,10,12,0,99,12,10,10,10,10,10,10,0
10024 DATA 100,12,10,10,10,10,10,10,126,2,101,12,26,26,26,26,26,26,26,8,102,0,0,0,0,0,62,72,72,72,0
10034 DATA 103,8,21,21,21,21,21,21,14,104,126,0,0,16,16,16,16,16,14,105,0,0,2,2,46,2,2,0,0
10044 DATA 106,0,2,1,1,1,1,1,46,0,107,126,0,0,0,20,16,10,2,2,108,0,0,66,2,126,2,2,0,0
10054 DATA 109,30,0,16,16,14,16,16,16,14,110,30,0,0,16,16,16,16,16,14,111,12,10,10,10,10,10,10,12
10064 DATA 112,31,10,10,10,10,10,10,12,0,113,12,10,10,10,10,10,10,10,10,31,1,114,30,0,0,16,16,16,16,0
10074 DATA 115,0,26,26,26,26,26,26,26,4,116,0,32,32,32,126,32,32,32,0,117,20,2,2,2,2,2,2,28,2
10084 DATA 118,0,16,8,4,2,4,0,16,16,119,20,2,4,0,16,8,4,2,20,10,10,10,10,12,12,12,10,10,10
10094 DATA 121,16,16,0,0,0,5,6,4,0,16,122,10,10,22,22,30,26,26,10,10
10104 DATA 33,0,0,0,0,122,0,0,0,34,0,0,96,0,0,96,0,0,35,36,126,36,36,36,36,126,36
10114 DATA 36,16,52,52,52,126,52,52,52,0,37,66,4,72,0,16,0,34,0,66,30,0,36,90,66,90,32,6,2,2
10124 DATA 39,0,0,0,0,96,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
10134 DATA 42,0,16,84,56,16,56,84,16,0,43,0,16,16,16,124,16,16,16,0,58,0,0,0,36,36,0,0,0,0
10144 DATA 59,0,0,1,35,34,0,0,0,0,61,0,40,40,40,40,40,40,40,0

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115 REM LISTING 5
125 ? #7;"EW"EGE-DOUBLE WIDTH PICA DOUBLE PRINT 5 CPIE-""
135 ? #7:? #7;"7 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ01234567":G0SUB 10163
145 ? #7;"6 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ01234567":G0SUB 10223:G0SUB 10141
155 ? #7;"5 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ01234567":G0SUB 10201
165 ? #7;"E5"4 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ01234567ET"
175 ? #7:? #7;"EW"ELITE DOUBLE PRINT 6 CPIE-""
185 ? #7:? #7;"7 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10213
195 ? #7;"6 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10223:G0SUB 10191
205 ? #7;"5 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10201
215 ? #7;"E5"4 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"ETP"
225 ? #7:? #7;"E-DOUBLE WIDTH COMPRESSED DOUBLE PRINT 8.5 CPIE-""
235 ? #7:? #7;"7 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"";
245 ? #7;"abcdefghijklmnopqrstuvwxyz":G0SUB 10213
255 ? #7;"6 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10223:G0SUB 10174
265 ? #7;"abcdefghijklmnopqrstuvwxyz":G0SUB 10234:G0SUB 10191
275 ? #7;"5 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10201
285 ? #7;"E5"4 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"";
295 ? #7;"abcdefghijklmnopqrstuvwxyzET-EW"
305 ? #7:? #7;"E-PICA DOUBLE PRINT 10 CPIE-""
315 ? #7:? #7;"7 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"";
325 ? #7;"abcdefghijklmnopqrstuvwxyz!";CHR$(34);"X%&'":G0SUB 10213
335 ? #7;"6 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10223:G0SUB 10224
345 ? #7;"abcdefghijklmnopqrstuvwxyz!";CHR$(34);"X%&'":G0SUB 10234:G0SUB 10191
355 ? #7;"5 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10201:G0SUB 10152
365 ? #7;"!";CHR$(34);"X%&'":G0SUB 10212
375 ? #7;"E5"4 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"";
385 ? #7;"abcdefghijklmnopqrstuvwxyz!";CHR$(34);"X%&'(ET"
395 ? #7:? #7;"E-ELITE DOUBLE PRINT 12 CPIE-""
405 ? #7:? #7;"7 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"";
415 ? #7;"abcdefghijklmnopqrstuvwxyz!";CHR$(34);"X%&'()*+;=<>e[\]^_":G0SUB 10213
425 ? #7;"6 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10223:G0SUB 10224
435 ? #7;"abcdefghijklmnopqrstuvwxyz!";CHR$(34);"X%&'()*+;=<>e[\]^_":G0SUB 10234:G0SUB 10191
445 ? #7;"5 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10201:G0SUB 10202
455 ? #7;"!";CHR$(34);"X%&'()*+;=<>e[\]^_":G0SUB 10212
465 ? #7;"E5"4 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"";
475 ? #7;"abcdefghijklmnopqrstuvwxyz!";CHR$(34);"X%&'()*+;=<>e[\]^_]ETP,"
485 ? #7:? #7;"E-COMPRESSED DOUBLE PRINT 17 CPIE-""
495 ? #7:? #7;"7 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"";
505 ? #7;"abcdefghijklmnopqrstuvwxyz!";CHR$(34);"X%&'()*+;=<>e[\]^_":G0SUB 10213
515 ? #7;"6 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10223:G0SUB 10224
525 ? #7;"abcdefghijklmnopqrstuvwxyz!";CHR$(34);"X%&'()*+;=<>e[\]^_":G0SUB 10234:G0SUB 10191
535 ? #7;"5 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"":G0SUB 10201:G0SUB 10202
545 ? #7;"!";CHR$(34);"X%&'()*+;=<>e[\]^_":G0SUB 10212
555 ? #7;"E5"4 PT. ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789,-.?"";
565 ? #7;"abcdefghijklmnopqrstuvwxyz!";CHR$(34);"X%&'()*+;=<>e[\]^_]ETP,"

```



**Figure 1**

**Figure 2**

Releases	10201	10212	10223	10234
----------	-------	-------	-------	-------



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## NOISE from NOYES

**\*\*What's Wrong Now? Or, Learning from scratch\*\***

D.B. Noyes - JACG

I bought my first ATARI (and my first computer) in January of 1984. A year later I discovered that JACG existed, and in the year since then my computer knowledge has increased ten-fold over the previous year. One could characterize the year between the purchase and my joining of JACG as the "Year That Was."

I started out by purchasing an 800XL, a TRAK AT-D2 SD/DD drive, a PANASONIC KX-PI090 printer and 3 ELEPHANT blank diskettes. I was ready to conquer the world! As soon as I got home I unpacked, hooked-up and powered-up. I used the disk that came with the drive (utilities and games) when I booted the system. Whirring and nothing. I checked the TRAK manual - everything seemed to be hooked up correctly. Checked the extensive(?) 800XL owner's manual - zippo! I'd seen better sales brochures. To make a long story short - it took me two weeks to find out that the utility game diskette was blank (apologies from TRAK [after two calls from me, I was told that an entire lot of TRAKs had been sent out thusly]); and the store (no longer in business) that sent me off with a "complete" package, had never bothered to tell me that there was something called "DOS" that I would be needing if I ever wanted to get off of ground zero.

Problems solved? No way! Decided that (to justify ownership of all of this sophisticated equipment) I needed WORD PROCESSING - bought ATARIWRITER for more \$\$ than I'll ever own up to, typed a quick text file using every font, bell and whistle that ATARIWRITER offered, and...no dice! Plain ol' dot matrix, no condensed, italic, bold or enhanced! But there was something about Control O and decimal printer commands (if the book that should have come with the printer had come with it) it would have been easier! I learned a new word: "Printer Driver", got the APX Printer Drivers (APX had gone "Belly-up"), but I eventually prevailed.

Getting somewhere now? Not on your life - I was going thru my "type-in every program in the magazine" phase (yes, after months I found out that there were ATARI magazines!). If the keyboard didn't lock-up, the programs wouldn't run. Solved the lock-up problem months later when I discovered (through the magazines) that the version of BASIC in the XL was bugged! Drove ATARI crazy until they gave me the GOOD version (free, my first victory!). As far as the programs not running, it turned out to be 50% my typing and 50% errata (that nice Latin word which means the magazine messed-up!).

Becoming and old pro by now, eh? Guess again, maybe old - but far from professional. Giving up on magazine programs (not enough hours in the day) I decided to spend some \$\$ and buy SOFTWARE. Surprise, some run, some don't. What's the

matter Dave, haven't you heard of the TRANSLATOR(s)? No, I bought two of them, ostensibly offered to make almost all (I'll swear I was told all) 800 software compatible with the XL's. FAT CHANCE! I think that I hold the record on the number of unusable software purchased in any one 24 hour period!

With the 20/20 vision that hind-sight brings - I guess I could have held off buying the computer for a year or two, read 20 or 30 books (and all of the magazines), attended JACG meetings, and then bought the hardware for 1/3 of what I paid for it---but look at all the FUN that I would have missed!

Next in NOISE from NOYES:

Telecomputing, or, what's the right number?

"I THINK MR. JONES REALLY PUT HIS FOOT INTO IT!!"



## Report From Germany

Dis komputer ist sehr gute. Den Graficks ist wonderbar und der schtinken sounds sind gruelichkite! Das Digliches Chippen sind zwie und dreizig bitten fur schrecklich schnellen processen. Der neuen Atari ist den besten komputer diesen Reporters haben sehn.. IBM und Apple und der Timex Sinclair wird allen scheissen der lederhosen.

Der schtinken recognisen chippen verschtehen allen Deutschen dialeecten und vernaculen schwerenwerden. Al der funktionieren kan aktivaten mit geschprechenen kontrollen. Der modenah ist wunderbar - man kann sehr schnell senden und transkitten. Und mit der vier megabyte RAM kann es runnen gigantiken programmen - wie der Makintoshen-mousendrawenrichtenprogrammen. Und der optionen - der satelliten antennen systemen ist richtig die besten! Jetzt kann man alles die restricteden adulten programmen von Amerika vatchen (va-voook!)!!! Deine Augen wird richtig ausfallen!!! Wir haben nur gutes dinges zu sagen uber die LITPA LOOF! Es ist ein schrectliches wunderbares Komputer. Atari uber alles!!!

Reprinted from Edmonton Atari Computer Hobbyists





Hello again! This month I have decided to visit an old acquaintance in a new way. About a year ago, Dick Kushner showed us an interesting program he converted to run on an ATARI 800. The program was entitled Sinescape. I have modified the original to run on the 520 ST in lowres mode. The listing is shown below.

BASIC has Trigonometric functions, but all of them take angles measured in radians as a parameter. It is inconvenient to have to convert the measure (the 800 had a DEGREE mode setting). Being used to degrees, I had to continuously force myself to remember to do the conversion (1 degree equals  $\pi/180$  radians).

I plan to convert this program to run on QSS Personal Pascal. I will report on that effort later this year. How about someone out there doing it in C and writing up the experience? In another vein, I think I might have been optimistic about the ST's drawing speed. I now believe that it draws about the same as the 800, but it handles three bit planes in that time instead of one. This means it is probably three times as fast for the same resolution. Obviously, this is a raw guess. It would be nice for someone to compare the two more precisely.

way of handling the problem. I find that listing the file in a different window, then editing the file in yet another window to be clumsy in the extreme (even discounting the awfulness of the line editor). I do find it useful to have a separate window for the command file, however. Enough for this month, happy STing everybody!

[illegible]



## PEEKs AND POKES

by Kenneth J. Pietrucha - JACG

One of the things for which most home computers are criticized, is speed. Without changing chips, there are few things you can do to speed things up.

To speed up long calculations you might consider temporarily turning off ANTIC. A ten to thirty percent increase in execution time is achieved by not having the CPU repeatedly refresh the screen. The disadvantage of this is that while things are speeded up, the screen goes black. To turn ANTIC off, do a POKE 559,0 preceded by a PEEK 559, to determine the default value to return things back to normal. My Atari 800 has a 34 in location 559, so a POKE 559,34 will turn the screen back on.

Here is a demonstration program to show you how much time you can save by turning off the screen.

```
10 GRAPHICS 0
15 POKE 559,0
20 FOR X=1 TO 10000
30 T=T+X
40 NEXT X
45 POKE 559,34
50 PRINT T
```

Run the program exactly as it is written and record the time it takes to give you an answer. During the time it is running, the screen will be black.

Next delete lines 15 and 45 and run the program again. This time it will run considerably longer. The average time recorded on my computer was 32 seconds vs. 57 seconds.

When you are plotting graphics on the screen, like some of the fractal demonstrations, you can save considerable time by using this method.

If some one out there with a 130XE or with a 520ST would like to write this column on alternate months, drop me a line at 610 Springfield Ave., Cranford, N.J. 07016.

Until next month...

## Computer Magazine Article Index Update

by Bill Brandt - JACG

Although slightly behind schedule, the Computer Magazine Article Index described in the August 1985 issue of the JACG Newsletter is finished and available to JACG members.

The creation of the index was prompted by my frustration in trying to find articles I had remembered seeing sometime before. The idea was that with a database of articles I could easily locate any article by simply entering the right combination of search criteria. Unfortunately reality took over as the number of floppy disks for storing data reached 14 and the typical search time reached two hours. The intermediate solution has been to make a

printout of the index data. Although the hard copy is almost seventy pages long, it is still relatively easy to locate specific articles. The long term solution will be to put the database on a hard disk. This will provide ample storage space, and will considerably speed up the search time.

In developing the index I had to set certain limits due to the time I had available. Consequently I could not include all the magazines that had Atari articles. Creative Computing, Byte, Family Computing, ROM, Softside, and others have all had helpful articles, and as time permits I hope to include as many of them as possible in future updates of the index. Likewise I hope to be able to add articles from the initial issues of COMPUTE.

The computer magazine article index database was set up using Synfile+. Each record in the database represents information on a separate magazine article. To help with the retrieval of information, each article has been classified by topic, for example, Graphics Article, Educational Game, Printer Review, etc. In addition to the normal information, such as the title of the article, author, magazine, date, etc., each record contains up to six lines of text describing the contents of the article. (Unfortunately there was not enough room in the hard copy version to include these descriptions.) At the present time the index contains 2990 articles from the following magazines:

Magazine	Issues	Dates
Atari Connection	Vol.1, No. 1 to Vol.4, No. 2	4/81 - 7/84
Atari Explorer	Vol.5, No. 1 to Vol.5, No. 3	2/85 - 7/85
ANALOG	No. 1 to No. 37	1/81 - 12/85
ANTIC	Vol.1, No. 1 to Vol.4, No. 8	4/82 - 12/85
COMPUTE	Vol.4, No. 1 to Vol.7, No.12	1/82 - 12/85
Home Computer	Vol.5, No. 5 to Vol.5, No. 6	8/85 - 11/85

The easiest way to make this information available to JACG members is to print additional copies of the magazine index. This is a "non-profit" offer since the price will be whatever the printer charges. To give you some idea of what is in the index, a sample page is shown at the end of this article. For those who are interested, send me your name and address, along with a check to cover the costs, and I will arrange to have the indexes printed and distributed. Send your request to:

William E. Brandt, Jr.  
27 Mohawk Trail  
Westfield, New Jersey 07090

The cost for printing will be based on the number of copies produced. I am assuming the number of requests will be less than 50, which puts the costs at \$7.00 per copy. If you want the index mailed to you, add another \$2.00 to cover the cost of an envelope and postage; otherwise you will be able to pick it up at one of the regular JACG meetings. Since this article will appear in the May issue of the newsletter, I will wait until the end of May to total the number of requests. The order will go to the printer at the beginning of June, and I should have the indexes available for distribution at the regular JACG meeting on June 14.





## MAGAZINE ARTICLE INDEX

TITLE	AUTHOR	MAGAZINE	VOLUME	NUMBER	ISSUE	DATE	PAGE	LANGUAGE
*** DISK DRIVE ARTICLES ***								
BOOKSHELF ON A LAZER DISK	NAT FRIEDLAND	ANTIC	4	6		10/01/85	14	
CASSETTE LOOKALIKE - YOUR DISK	ERIC VERHEIDEN	ANTIC	3	3		07/01/84	81	BASIC & ASSEMBLY
MODERN MEMORY	SELBY BATEMAN	COMPUTE	6	3	46	03/01/84	44	
MONSTER MEMORY	STAFF	COMPUTE	7	8	63	08/01/85	16	
ST USES IBM DISK FILES	DAVID SMALL	ANTIC	4	7		11/01/85	12	
THE BEGINNER'S PAGE	RICHARD MANSFIELD	COMPUTE	5	3	34	03/01/83	42	
THE CARE AND FEEDING OF FLOPPY	DAVID DUBERMAN	ANTIC	3	4		08/01/84	90	
USING THE PERCOM DRIVE	KEVIN LEVER	ANALOG		10		01/01/83	92	
*** DISK DRIVE REVIEWS ***								
AMDC-1	RICHARD DEVORE	COMPUTE	6	3	46	03/01/84	110	
AMDEK AMDC	DAVID DUBERMAN	ANTIC	3	4		08/01/84	83	
ASTRA 1620	JIM HANEY	ANALOG		31		06/01/85	39	
AT-88 S-1 DISK DRIVE	RICHARD DEVORE	ANTIC	2	8		11/01/83	108	
ATARI 1050	JOHN CLARK	ATARI CONNECTION	4	1		04/01/84	72	
ATARI 810 DISK DRIVE/DOS II	STAFF	ANALOG		1		01/01/81	23	
DISK DRIVE SURVEY	L. DZIEGIELEWSKI	ANTIC	3	4		08/01/84	36	
MICRO MAINFRAME MF-1681	L. DZIEGIELEWSKI	ANTIC	2	6		09/01/83	92	
MISSION REDUX	DAVID SMALL	ANTIC	2	9		12/01/83	111	
NEW DISK DRIVES FOR THE ATARI	BRIAN MORIARTY	ANALOG		17		03/01/84	73	
PERCOM DOUBLE DENSITY DISK DRI	WINSTON LAWRENCE	ANALOG		7		03/01/82	57	
*** DISK DRIVE UTILITIES ***								
ATARI DISK DRIVE COMPATABILITY	BILL WILKINSON	COMPUTE	7	10	65	10/01/85	110	BASIC
GETTING YOUR ATARI DISK DRIVE	BOB CHRISTIANSEN	COMPUTE	4	5	24	05/01/82	126	BASIC & ASSEMBLY
SNAIL	BRIAN MORIARTY	ANALOG		12		07/01/83	94	BASIC
*** DOS ARTICLES ***								
ATARI DRIVES AND DISK OPERATIN	RICHARD KUSHNER	COMPUTE	4	6	25	06/01/82	140	
BUGS & BYTES	STAFF	ANALOG		4		07/01/81	54	
DO MORE WITH DOS 2.0	RICHARD KRUSE	ANTIC	3	4		08/01/84	31	BASIC
DOS 2.0S & THE 1050 DISK DRIVE	BILL WILKINSON	COMPUTE	6	5	48	05/01/84	148	
ESCAPE FROM DOS 3	CHARLES JACKSON	ANTIC	3	9		01/01/85	48	
EVERYTHING YOU WANTED TO KNOW	ERIC CLAUSEN	ANTIC	4	3		07/01/85	40	
FORTH-DOS	WILLIAM VOLK	ANALOG		9		09/01/82	55	BASIC & FORTH
HIDDEN DOS COMMANDS	JASON LEX THOMAS	COMPUTE	6	4	47	04/01/84	143	BASIC
HOW TO LIVE WITHOUT DOS	DAN HIGGINS	ANALOG		17		03/01/84	54	BASIC & ASSEMBLY
WHY YOU WANT DOS 2	JACK POWELL	ANTIC	3	12		04/01/85	14	
*** DOS REVIEWS ***								
ATARI DOS 3	JOHN CLARK	ATARI CONNECTION	3	4		01/01/84	72	
DOS-MOD	L. DZIEGIELEWSKI	ANTIC	2	9		12/01/83	128	
K-DOS	JERRY WHITE	ANALOG		7		05/01/82	10	
TOP-DOS	CHARLES BACHAND	ANALOG		23		10/01/84	75	



## LOOKING FOR A FEW VOLUNTEERS

by Charlie Miller - JACG

For the last few months Bill Martin has been asking for volunteers. Through direct appeals at the monthly meetings and in the newsletter he has tried to fill various positions. I have scanned all these requests for something that I thought I could handle. Then Bill threw a request out at the April meeting with the taunt of "no experience, other than being able to turn on your Atari necessary." I thought that maybe he had something that I was able to handle. After hearing Bill's proposal I decided I would give it a try. I contacted Bill later that evening and told him I would like to give it a try.

This task I have agreed to handle is to organize members who are willing to give help to novices in the Atari world and to direct the needy novices to those in the know. I consider myself a practicing novice and will need help with getting information to those who need it. I therefore plan to build a database of volunteers who have some area of expertise that they are willing to share. In an attempt to keep your volunteering of knowledge as convenient as possible I would also like to keep on file the days and hours that would be most favorable for you to entertain questions.

If you feel you have some area of the hobby that you can help with, please give me a call so I can start compiling my references. This project can only work if I can get a broad cross section of the club to participate. So, even if you feel you are not an expert but have an area, such as graphics, basic programming, or you can just offer help with Atariwriter since you feel comfortable with it, consider getting your name on file. This idea not only is a simple way for you to be a participant and contributor to your J.A.C.G. but is also an excellent chance to directly communicate with other members of the Atari family.

You can get your name on file by calling me at (201) 469-6190. I'm a shift worker so don't be afraid of my answering machine. I'll get back to you real fast so this program will be a huge success. Thanks, in advance, for your help!



The Australian Atari Gazette (Melbourne)

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Pharaoh's Curse: the password is SYNISTOPS.

Spare Change: pressing CTRL-Z will bring you to the Zerk Control Panel.

One On One: if you make three shots in a row the fourth will always go in.

Ultima III: to get into the Exodus Castle type EVOCARE.

NOW IT'S YOUR TURN. Send those hidden goodies you've discovered to the editor so all can share in the wealth.



by Joseph S. Kennedy

Well, it's Spring, the blossoms are on the trees, the grass is coming up on the soccer fields and your tax return has been mailed in and you're just waiting for the refund. Perhaps you're even contemplating on what to do with it. If you don't intend to blow it on a trip to Mexico for the World Cup games, you could consider financial alternatives. For some help in this direction the program BUSINESS on Volume 016 - Home/Business #001 - is where you should look. This program was mentioned briefly in the column on financial programs a few months ago but is so good that it deserves its own column, which it is getting now.

The opening menu tells you a lot about this program, so let's look at the choices offered:

- 1 AMORITIZATION (sic) TABLE
- 2 MONTHLY MORTGAGE PAYMENT
- 3 DEPRECIATION SCHEDULE
- 4 SAVINGS AND LOANS
- 5 FIND THE AVERAGE
- 6 SQUARE FEET AND SQ. YDS.
- 7 PAYCHECK CALCULATION
- 8 INTEREST ON AN INVESTMENT
- 9 WHAT IF MORTGAGE COMPARISON
- 10 PROPERTY EXPENSES
- 11 MONTHLY BAR GRAPH
- 12 DECIMAL / HAXADECIMAL (sic)
- 13 U.S. / METRIC
- 14 CHECKBOOK BALANCE
- 15 HELP
- 16 RETURN TO DISK MENU

As you can see this is sort of a poor man's Financial Cookbook with a lot of extras thrown in. (But the authors have not invented a new number system, they just are graduates of the Scott Brause Remedial Spelling Course. That is of course hexadecimal on point 12.)

Choose 1 and you can print to screen an amortization table for any loan. Choice 2 will quickly calculate the monthly payment for any simple mortgage. (Are any mortgages simple when it comes time to try to figure out how to pay them?) Selection 3 will print out a depreciation table for any asset over any period of years.

Key in 4 and you get another menu which offers the following choices:

- 1 BALANCE OF A LOAN AFTER N PAYMENTS
- 2 MONTHLY PAYMENT TO AMORTIZE LOAN
- 3 # OF PAYMENTS TO AMORTIZE A LOAN
- 4 ANNUAL % RATE USING AN INTERVAL
- 5 MONTHLY PAYMENT & INT. ON LOAN
- 6 ANNUAL INVESTMENT GROWTH
- 7 PERIODIC SAVINGS PLAN
- 8 FUTURE PRICE VS INFLATION
- 9 RETURN TO MAIN MENU

See what I mean? It's beginning to look more and more like Financial Cookbook all the time, isn't it? You will see some duplication in the functions. This is due to the fact that this program was not written by one person but was compiled from

several different listings into this one large offering. With a quick listing of the program you can find where many of the individual modules come from.

Number 5 will help you to quickly find the average of several numbers. With option 6 you can calculate the number of square feet of square yards in your house or apartment or offices. Pick 7 and you can calculate your gross pay if you are an hourly worker. It will even let you add up your hours if you work different times. Designate 8 if you wish to be driven crazy. This module, which calculates the interest on an investment, needs work in the screen printing section.

Opt for 9 if you're thinking of taking out a loan. This module will let you vary the amount of a loan; the interest rate or the term of the loan to determine what would be best for you. After you have purchased property for income (hopefully) specify 10 to keep a tab on the expenses for the property. Elect 11 if you wish to produce a bar graph of your monthly earnings on your investment or for anything else you'd like to graph on a monthly basis. This particular module was written by Jerry (The Wizard of Atari BASIC) White.

Call upon 12 to convert between decimal and hexadecimal but be sure that it's the last function you want before you reboot. Due to a bug the program locks up the computer after one conversion. Take 13 for converting between US and Metric values. You have your choice of 7 conversions of length, mass, volume and temperature. Should you be a total computer newcomer then 14 is for you. It's the standard checkbook balancer. Remember when you told your wife or husband (no chauvinism in this column) that you could use the computer you wanted to buy to put the family finances back in order. Well this is the program that will do it. Finally, number 15 probably is the best help screen you'll ever see.

That's BUSINESS and a lot more. This one program is accompanied by many other programs on the library disk including a basic word processor and a calorie counter. Plus I must thank Peter Mark for helping me get through fifteen options without having to repeat an intro. In case you're wondering, Peter Mark's last name is Roget. See you next month.



"We have to go back — our software license has expired!"

The Australian Atari Gazette  
(Melbourne)



## LOT-ATARI

by Ty Klock - JACG

Tired of losing week after week at New Jersey's Pick 6 lottery? Wouldn't it be nice to have the odds with you when you select your six numbers? Here's a program that just might make you a winner. It uses a one dimensional array to store the frequency of appearance of the numbers 1 to 42. All you have to do is to enter the data from previous weeks, months, or years. The computer does the rest. The program listing is given below with some past, lucky, winning numbers.

```
10 GR. 0
20 ? "OUTPUT: 1=SCREEN 2=PRINTER"
30 INPUT B
40 IF B=2 THEN LPRINT "NUMBER","FREQUENCY":
LPRINT:GOTO 60
50 ? "NUMBER","FREQUENCY":?
60 DIM A(42)
70 FOR X=1 TO 42
80 LET A(X)=0
90 NEXT X
100 READ X
110 IF X=-1 THEN GOTO 140
120 LET A(X)=A(X)+1
130 GOTO 100
140 FOR X=1 TO 42
150 IF B=2 THEN LPRINT " ";X,"
";A(X):GOTO 170
160 PRINT " ";X," ";A(X)
170 NEXT X
180 C=0
190 IF B=2 THEN LPRINT:LPRINT
"FREQ.,""NUMBER":
LPRINT:GOTO 210
200 ?:"FREQ.,""NUMBER":?
210 FOR X=1 TO 42
220 IF B=2 AND A(X)=C THEN LPRINT " ";C,"
";X:
GOTO 240
230 IF A(X)=C THEN ? " ";C," ";X
240 NEXT X
250 C=C+1
260 GOTO 210
500 REM NOVEMBER 1984
501 DATA 6,7,25,32,37,38
502 DATA 1,3,4,11,13,20
503 DATA 3,11,22,23,34,39
504 DATA 8,14,20,21,30,35
505 DATA 7,12,17,18,19,35
510 REM DECEMBER 1984
511 DATA 5,8,10,14,32,37
512 DATA 12,15,17,20,26,38
513 DATA 10,14,18,20,32,34
514 DATA 13,24,32,33,37,38
515 REM JANUARY 1985
516 DATA 11,26,31,32,33,39
517 DATA 9,13,16,27,30,34
518 DATA 10,16,17,19,29,30
519 DATA 6,7,9,19,24,32
520 DATA 2,9,10,12,20,30
521 REM FEBRUARY 1985
522 DATA 5,20,23,29,30,39
523 DATA 12,16,18,23,29,32
524 DATA 10,20,23,25,29,30
525 DATA 8,14,21,30,34,37
526 REM MARCH 1985
527 DATA 7,10,15,17,22,38
528 DATA 13,15,17,18,24,32
529 DATA 1,7,13,19,22,38,-1
```

As you will see from the output, all of the numbers will not have the same frequency of appearance over a period of several

months. As a matter of fact, I have collected data for about a year now, and 32 seems to be a very popular number. Some numbers have yet to be selected! Very interesting... Good luck. Until next time, may the "farce" be with you.

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### EPITAPHS FOR Mathematicians

from SIAM NEWS

Here lies Albert Einstein -- relatively speaking.  
Here lies Napier's bones.  
Fermat -- so I guessed.  
Here lies Pierre de Fermat -- unfortunately this stone is too small to contain a proper epitaph.  
Euclid -- his spirit is gone but here lie his elements.  
Here lies G. H. Hardy with no apologies.  
Here lies S. Banach with plenty of space.  
Georg Cantor -- set in peace.  
Jorgen P. Gram 1850-1916 -- a weighty mathematician.  
Isaac Newton -- a body at rest tends to remain at rest.  
Here lies Heisenberg -- maybe!  
S. Ramanujan -- his days were numbered.  
R.I.P Henri Lebesgue -- talent beyond measure.  
Henri Lebesgue -- Dis-integrated.  
Augustin Louis Cauchy -- a complex man.  
Here lies Cauchy's residue.  
David Hilbert -- he no longer has problems.  
Here rests B. Taylor -- his thoughts live on, but the remainder is vanishing.  
Eduard Heine 1821-1881 -- now compact, closed and bounded.  
Peter G. L. Dirichlet -- he had potential.  
Rene Descartes -- fallen before de horse.



# Chop Suey Forth

(Part three of three)  
By Donald Forbes -- JACB

Lee: You said, Don, that the Atari can provide interesting sound effects that will help me sell more meals in the Chinese restaurant, the Teahouse of the September Morn, that my uncle left me in San Francisco. What do you have?

Don: The Atari, as you know, Lee, has superb sound capabilities, with its four voices. Floegel, in his book 'Forth on the Atari,' has a number of programs that show them off to good advantage. Unfortunately, they all have to be rewritten to be used with Team Atari FORTH (Disk #19 and #20 in the JACB library) or valFORTH or one of the later FORTHS. He uses the SOUND statement from an early version of Atari FORTH.

In BASIC the order of the parameters is channel (voice), frequency (pitch), distortion, and volume, for which valFORTH invented the mnemonic CatFish Don't Vote. The same order is used by most other FORTHS, but Floegel (with QS FORTH) uses the reverse order so that his programs have to be adapted. Some of them sound very realistic. Listen to this, Lee, and tell me what you think.

```
: \ IN @ 32 / 1+ 32 *
  IN ! ; IMMEDIATE
: WAIT 0 DO LOOP ;
: OFF 4 0 DO I 0 0 0 SOUND LOOP ;
: ENGINE \ engine sound
  BEGIN 0 200 10 10 SOUND
  1500 WAIT OFF ?TERMINAL UNTIL ;

-1 VARIABLE XX
: LO1
  40 150 DO 0 15 0 I 10 / SOUND
  XX @ +LOOP ;
: LO
  50 1 DO LO1 XX @ -7 > IF
  -1 XX +! THEN LOOP ;
: LS
  1 40 10 10 SOUND
  2 10 10 8 SOUND
  3 90 10 10 SOUND ;
: STE
  2 0 DO LS 4000 WAIT OFF
  1000 WAIT LOOP ;
: STEAM \ steam locomotive
  -1 XX ! LO STE LO OFF ;

: SI 15 0 DO 0 60 I 2 * - 10
  I SOUND 100 WAIT LOOP ;
: POLICE-SIREN
  BEGIN SI OFF 50 WAIT
  ?TERMINAL UNTIL ;

: DOWN 200 100 DO I 10 8 SOUND
  100 WAIT LOOP ;
: UP 100 200 DO 0 I 8 SOUND
  100 WAIT -1 +LOOP ;
: EUROPEAN-POLICE-SIREN
  10 0 DO UP DOWN LOOP OFF ;

: DOWNPOUR ( n ) 2 SWAP 0 SWAP 0
  SWAP SOUND ;
: RAIN \ rainy weather
  150 0 DO I 10 / DOWNPOUR 100 WAIT
  2 +LOOP BEGIN ?TERMINAL UNTIL ;
```

```
0 VARIABLE RND 53770 @ RND !
: RANDOM RND @ 31421 * 6972 +
  DUP RND ! ;
: RND# ( n - n1 ) RANDOM U*
  SWAP DROP ;
: C ( n - n1 )
  11 RND# 5 + 10 * SWAP / ;
: T
  100 5 DO 0 I 8 I C SOUND
  1 I 20 + 8 I C SOUND
  DUP WAIT 5 RND# +LOOP OFF ;
: THUNDER
  300 T ;

: B ( - n ) 255 RND# 50 + ;
: X ( - x ) 200 RND# ;
: T1 ( )
  B 1 DO 0 I 8 15 SOUND LOOP ;
: T2 ( )
  X 1 DO LOOP ;
: TH ( )
  2 0 DO T1 OFF T2 OFF LOOP ;
: STORM \ thunderstorm with rain
  TH TH THUNDER TH RAIN ;

15 VARIABLE V1 15 VARIABLE V2
15 VARIABLE V3
: ST 15 V1 ! 15 V2 ! 15 V3 ! ;
: SS
  0 20 8 V1 @ SOUND
  1 40 8 V2 @ SOUND
  2 70 8 V3 @ SOUND ;
: DECREMENT
  -1 V1 +! -1 V2 +! -1 V3 +! ;
: EXPLOSION
  ST BEGIN SS DECREMENT 1000 WAIT
  V3 @ 0< UNTIL ;

: HEARTBEAT
  10 1 DO 0 12 3 15 SOUND 1000 WAIT
  OFF 6000 WAIT LOOP ;

: PITCH ( - n ) 7 RND# 250 + ;
: VOLUME ( - n ) 4 RND# 6 + ;
: F 0 PITCH 14 VOLUME SOUND ;
: HOUSEFLY \ musca domestica
  BEGIN F 500 WAIT ?TERMINAL
  UNTIL OFF ;

: INCREASE ( n ) 10 / 1 DO
  0 60 10 I SOUND LOOP ;
: DECREASE ( n ) 2 * 10 / DUP 1
  SWAP DO DUP 0 SWAP 60 SWAP 10
  SWAP SOUND -1 +LOOP DROP ;
: SLIDES
  100 0 DO I INCREASE 2 +LOOP
  OFF ;
: DROPS
  0 100 DO I DECREASE -2 +LOOP
  OFF ;
: SPINS
  0 100 DO I INCREASE I DECREASE
  -2 +LOOP ;
: DROPPED-COIN SLIDES DROPS SPINS ;
```

What do you think, Lee?

L: They all sound very realistic. But I don't think they have any application to our business. The first four were just noise--engines, locomotives, police car sirens, and European police cars. There are no locomotives or European police near our restaurant. We have heavy carpeting on the floor to give our customers some quiet. The rain, thunder, storm and explosion will make our customers so nervous that they will not



be able to enjoy their meal. The heartbeat sound will make them worry about their cholesterol level and stop ordering dessert. And the housefly! They will never come back.

But I like the falling coin. Perhaps the waitresses could use it to remind the customers to leave a tip. And if we have a bothersome customer, we can drop the coin before his meal arrives. He will go crazy wondering how a dropped coin could spin on the carpet, will look for it on his hands and knees, decide he has had one too many, and then leave for good!

What else can we come up with?

D: We can build an electronic fortune-cookie machine with the instructions on string handling for the Atari. We can type in a new set of topics every morning under headings such as health, romance and friends, which the customer can then recover from the keyboard. We would not have to stay late every night stuffing the fortune slips into the cookies. First we must set up some space in memory.

```
0 VARIABLE COOKIE 280 ALLOT
: HEALTH COOKIE 0 + 40 EXPECT ;
: WISDOM COOKIE 40 + 40 EXPECT ;
: ROMANCE COOKIE 80 + 40 EXPECT ;
: FRIENDS COOKIE 120 + 40 EXPECT ;
: FUTURE COOKIE 160 + 40 EXPECT ;
: BUSINESS COOKIE 200 + 40 EXPECT ;
: CAREER COOKIE 240 + 40 EXPECT ;
```

We now have space for the 38-character lines that will fit on the screen. Then we must input the fortunes by answering the prompts.

```
: COOKIE-INPUT \ input the fortunes
125 EMIT CR COOKIE 280 32 FILL
." Health : " CR HEALTH
." Wisdom : " CR WISDOM
." Romance : " CR ROMANCE
." Friends : " CR FRIENDS
." Future : " CR FUTURE
." Business : " CR BUSINESS
." Career : " CR CAREER ;
```

How about these fortunes?

```
Health : Remember your mother's advice
Wisdom : Persistence will be rewarded
Romance : Romance will be risky tonight
Friends : You are secretly being admired
Future : Keep talking, success is near
Business: Look for new horizons
Career : Bide your time for success
```

To print the output we need a special TYPE statement that gets rid of the Atari hearts.

```
: TYPE-ATARI -DUP IF OVER + SWAP
DO I C@ 127 AND DUP 0= IF DROP
ELSE EMIT THEN LOOP ELSE
DROP ENDIF ;
: PRINT ( n n1 - ) COOKIE + SWAP
-TRAILING TYPE-ATARI ;
: COOKIE-OUTPUT \ display fortunes
CR 40 0 PRINT SPACE
CR 40 40 PRINT SPACE
CR 40 80 PRINT SPACE
CR 40 120 PRINT SPACE
CR 40 160 PRINT SPACE
CR 40 200 PRINT SPACE
CR 40 240 PRINT CR ;
```

Here is the code for the customer:

```
: HEALTH-FORTUNE
CR 40 0 PRINT SPACE CR ;
: WISDOM-FORTUNE
CR 40 40 PRINT SPACE CR ;
: ROMANCE-FORTUNE
CR 40 80 PRINT SPACE CR ;
: FRIENDS-FORTUNE
CR 40 120 PRINT SPACE CR ;
: FUTURE-FORTUNE
CR 40 160 PRINT SPACE CR ;
: BUSINESS-FORTUNE
CR 40 200 PRINT SPACE CR ;
: CAREER-FORTUNE
CR 40 240 PRINT SPACE CR ;
```

Now the customer can type HEALTH-FORTUNE or CAREER-FORTUNE for whatever fortune he or she wants.

L: Great! We could have separate fortunes for each of the twelve birth years; for the ox, horse or sheep years, the cock, hare or dog years, the rat, snake or monkey years, or the boar, tiger or dragon years.

Anything we can do with graphics?

D: We can combine some of the graphics in the book into an eye-catching window display. We will, however, have to rewrite the code. The FORTH in the book (QS FORTH) is an early FORTH version, so that n1 n2 n3 PLOT and n1 n2 n3 DRAWTO have to be rewritten as n3 COLOR n1 n2 PLOT or n3 COLOR n1 n2 DRAWTO, and then n1 n2 n3 SETCOLOR must be changed to n3 n2 n1 SETCOLOR. If you type 0 755 C! the cursor disappears. With 4 755 C! the letters turn upside down. But 3 755 C! restores everything. Look at this:

```
: DELAY 30000 0 DO LOOP ;
: CHINESE-SCREEN 4 755 C! 125 EMIT
CR ." CHINESE "
CR ." CHOICE " CR CR
CR ." ( fill with any graphics )"
CR ." TODAY'S SPECIAL IS " CR CR
CR ." BEIJING ROAST DUCK "
CR ." ( fill with any graphics )"
10 0 DO DELAY DELAY 3 755 C!
DELAY DELAY 4 755 C! LOOP 3 755 C! ;
```

The sign looks like Chinese but is really English, and keeps flipping between the two. Here is another sign built from three separate pieces.

```
0 VARIABLE RND 53770 @ RND !
: RANDOM RND @ 31421 * 6972 +
DUP RND ! ;
: RND# ( n - n1 ) RANDOM U* SWAP
DROP ;
: RANDOM-PLOT
7 16 + GR. 0 0 2 SETCOLOR
500 0 DO 16 RND# COLOR
160 RND# 80 RND# PLOT LOOP ;
```

```
0 VARIABLE X 0 VARIABLE Y
: INITIALIZE
8 GR. 0 0 2 SETCOLOR
260 X ! 10 Y ! ;
: PLOT-POINT
1 COLOR 160 80 PLOT ;
: -X -10 X +! ;
: +X 10 X +! ;
: -Y -10 Y +! ;
: +Y 10 Y +! ;
```



```

: DRAWLINE 1 COLOR X @ Y @ DRAWTO ;
: LEFT 20 0 DO PLOT-POINT
DRAWLINE -X LOOP ;
: DOWN 15 0 DO PLOT-POINT
DRAWLINE +Y LOOP ;
: RIGHT 20 0 DO PLOT-POINT
DRAWLINE +X LOOP ;
: UP 15 0 DO PLOT-POINT
DRAWLINE -Y LOOP ;
: WHIRL INITIALIZE
LEFT DOWN RIGHT UP ;

```

```

: COMMERCIAL
0 GR. 0 755 C! \ hide cursor
10 84 ! 12 85 C! \ set cursor
." Eat at Chan's"
10000 0 DO LOOP 3 755 C! ;

```

```

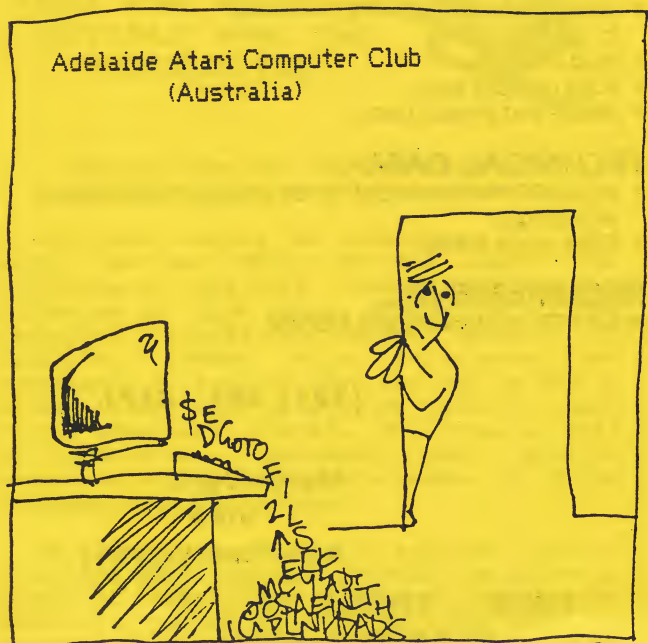
: WINDOW-DISPLAY 5 0 DO
RANDOM-PLOT COMMERCIAL
WHIRL COMMERCIAL LOOP 0 GR. ;

```

L: That first sign seems way out. But we might be able to put the second in the window. Is there anything else we can use?

D: You can convert the computer into a piano complete with built-in tunes. There is also a program to build a mailing list on disk. There are programs to enter the customer names, to print the contents of the data base, to search for a specific entry, to delete any entry, or replace a deleted entry with a new one. You can even display the mailing list in colors.

L: We need a mailing list for the business. But your last sign made me hungry. Why don't we take a break for a fast-food hamburger with fries and onion rings, and then come back to the mailing list...By the way, do you think we might invite our friend Mister Floegel to eat in my restaurant the next time he is in San Francisco? If his check has a prime number, he wouldn't even have to pay for the meal.



I THINK I LEFT A CLOSED LOOP  
IN THAT PROGRAMME ---



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### RANDOM NUMBER GENERATOR

by Mary Russomano - JACG

Have you ever needed a series of random numbers to randomize your dinner party seating or to add spice to classroom discussion groups? Or perhaps you wish to raffle off several prizes without repeating any of the previous numbers? You might want to create your own lottery quick pick. The following core program was written by Scott Brause and expanded into a software package using Gr. 0, 1 and 2 by a JHS student for the limited purpose of generating random and periodic lunch room seatings. If you make any interesting modifications, let us know.

```

10 DIM A(52)
20 FOR I = 1 TO 51: A(I)=0: NEXT I
30 FOR I = 1 TO 51
40 X = INT(51*RND(1)+1)
50 Z=0
60 IF A(Z)=X THEN GOTO 40
70 Z=Z+1:IF Z<51 THEN GOTO 60
80 A(I)=X
90 PRINT I;" " ;X
100 NEXT I:GOTO 120
110 END
120 FOR I=1 TO 51
130 LPRINT I;" " ;A(I);
140 NEXT I

```

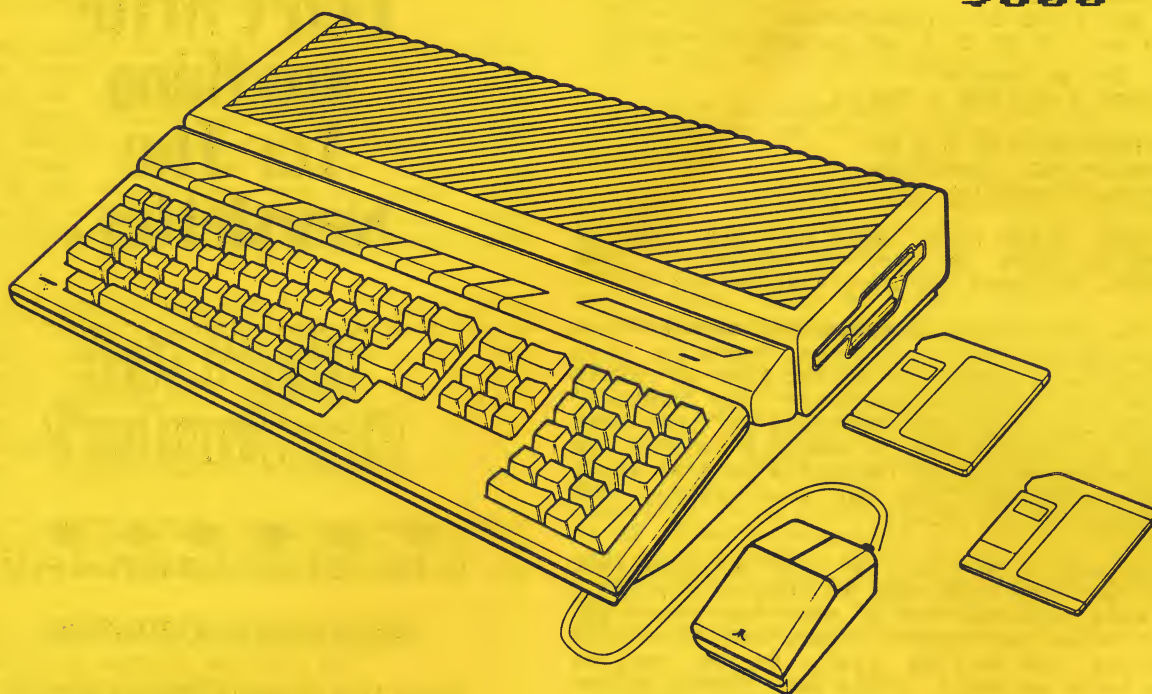


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## Bargain & Sale

by Gary J. Gorski  
Sales Manager - JACG

Good news, the sale of the computer desks is going well. We still have a few more left, but they are on a first come, first come basis. Most likely there will be one set up in the lobby at the next meeting, along with the specifics. The cost, amazingly only \$30.00.

Also, checks are being accepted for the purchase of the Robotics equipment you saw at the demo in March. The following parts:

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More good news. Do you want to sell your old original software (NOT BACKUPS) that you have outgrown, or were disappointed with? Let the JACG sell it for you. All you need to do is bring it to the monthly meeting marked with the price you want. For 20% of the purchase price the JACG will sell it for you!

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Gary J. Gorski  
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Writing For The JACG Newsletter  
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Articles should be submitted to the Editor by the 20th of the month for inclusion in the next issue. Submissions preferred on disk using Atariwriter. Use paragraph indentation marker (CTRL-P) if possible. Other file structures are acceptable as long as they are not in DOS 3. Do not insert special printer control codes unless absolutely needed. All formats will be considered, including hand written documents and transfer via modem, if first arranged with the Editor.

We encourage everyone to express his/her thoughts, knowledge and opinions as often as possible. Writing will be modified at the discretion of the Editor. No piece will be knowingly altered out of original context or intent.

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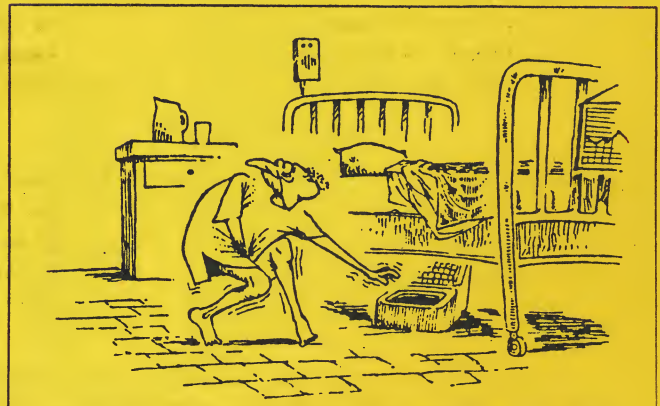
Take a moment and look at your mailing label on a recent issue of the JACG newsletter. Check the bottom right hand corner following "Last Issue:". This is the month/year when your membership expires. Try to renew at least one month early. This helps us keep our book keeping in order and avoids your missing any issues of the newsletter.

There are two easy ways to renew:

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The Australian Atari Gazette (Melbourne)



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JACG NEWSLETTER - VOLUME 5, NUMBER 9

May 1986

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